

XVIII. *A Contribution to the Classification of the Coleopterous family Passalidæ.* By GILBERT J. ARROW, F.E.S.

[Read October 3rd, 1906.]

THE *Passalidæ* form a family which, almost universally distributed and very abundant in the forest regions of the Tropics, is probably as compact and homogeneous as any equally numerous and widely distributed group of animals. As a corollary we find the differences between the component forms very slight and with exceedingly numerous degrees of variation the separation into species is very imperfect.

Whether the remarkable secondary adaptation of the wings to serve as organs of sound-production is to be regarded as cause or effect, it seems to be the case that their primary function is becoming obsolete, species being found in different parts of the family in which they are already useless for flight. The result is that locomotion has become very restricted and segregation into a multitude of local forms, too recent for marked specific differentiation has taken place.

From their generally large size, general form and manner of life, the *Passalidæ* could not fail to be associated in the mind with the *Lucanidæ*, but the generally accepted view that there is a special relationship between the two families I believe, as I have previously stated, has little substantial foundation. A rather striking feature in which the *Passalidæ* differ from the *Lucanidæ*, as from wood-feeding insects in general, is their constancy of size, a phenomenon of which we have recently learnt the probable explanation. Dr. Ohaus has made the very interesting discovery that these insects are not during their early stages at the mercy of the rather precarious circumstances of their environment like others of the same habit of life, but that by a social organisation of a kind new to us among insects they have become to some extent masters of their fate. The Brazilian species studied by this naturalist live in small communities consisting of the two parents

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and from two to seven larvæ, the parents tending their young, preparing their food and if necessary guiding them into safety.

The lamented death of Herr Richard Zang is only the latest of a series of misfortunes which have befallen a family of insects which as regards its systematic treatment has surely been the most unfortunate of groups. The remarkable classification of Kaup, based upon geometrical principles is notorious. The posthumously published monograph of Kuwert, without being founded upon a radically false conception, has similarly suffered from a futile attempt to achieve finality with extremely imperfect materials. The much less ambitious work of Stoliczka upon Oriental species, being the work of a naturalist who would scarcely have claimed to be an entomologist, has naturally in its degree increased instead of diminishing the confusion. And now a fresh misfortune has overtaken this study in the untimely death of a young entomologist who had within the last two or three years commenced a serious investigation of the family. The few papers already published by him reduced at least to a small extent the tangle existing and gave promise of a valuable accomplishment in a field where the exceptional difficulties must repel anyone not both enthusiastic and painstaking in a special degree. It can hardly be hoped that the loss will be soon repaired in spite of the great need. No list of the species has been published since 1868 although the number of names now almost quadruples that of the Munich Catalogue, nor can a complete catalogue be usefully undertaken until a thorough examination and comparison of the more than 600 types have been made by a specialist.

The Monograph of Kuwert is an admirably consistent and laborious work which, had its author lived and availed himself of increased materials and experience, would no doubt have been considerably corrected and improved. In its published form its value is largely destroyed by the aim at an impossible exhaustiveness having led him to include hasty determinations and descriptions based upon single, imperfect or abnormal specimens and to ignore the facts of geographical distribution and the rules of nomenclature.

Most of the common species of older authors have been subdivided by Kuwert by a minute examination of

external structure and some of the forms distinguished by him are no doubt constant and worthy of separation, but he seems not to have recognised the existence of variability and based species as confidently upon single specimens, even if immature or worn, as upon compared series. The absence of the types of the older systematists too rendered it impossible to allocate the old names among the forms tabulated by him, nor did he pay much attention to the indications afforded by locality, etc. A further complication has been introduced by the publication of a number of descriptions of Central American forms by Mr. T. L. Casey during the issue of Kuwert's Monograph.

Thus the *Paxillus leachi* of Macleay, hitherto regarded as ranging from Mexico to Brazil, has been divided into six species by Kuwert and the original name assigned to an insect from Guatemala, although Macleay indicates the habitat of the type as "S. America." Yet another name, *P. parvus*, has been bestowed upon specimens from Honduras by Mr. Casey who assigns *P. leachi* to Brazil, and distinguishes it as a larger species, although neither size nor province was specified by Macleay, whose type is presumably in Australia. Such work done in the dark has introduced almost hopeless confusion into many parts of the family. In the present instance I have been unable to find any specific distinctions after carefully examining a long series of specimens representing almost every province from Southern Mexico to the Amazons, and the range of size is not greater than that given by Mr. Casey for his Honduran examples. H. W. Bates was of the same opinion with regard to the Central American specimens, of which Kuwert makes five species. The latter's disregard for both geographical distribution and the element of wear is curiously shown in one of these five forms which he records from "Guatemala and Paramaribo," and distinguishes only by the absence of the customary slight hair-tufts upon the shoulders and in the separation of the five into two divisions according to the existence of two or three terminal teeth to the mandible. These features are valueless by themselves, since the shoulder-tufts frequently and the inner teeth of the mandible almost invariably, become worn down and indicate nothing but the age of the individual.

A considerable number of Kuwert's species have no greater value than these, but on the other hand his

minute research has led him to detect points of difference overlooked by others which in insular forms or when from any cause segregation has taken place have a real value.

In the present paper I have only attempted to correct a few of his errors which have come under my notice in the course of an examination of older authors' types existing in this country. M. René Oberthür, now the possessor of Kuwert's collection, has kindly sent me such of his types as were necessary for comparison. I have examined all the types of Hope, Smith, and Bates, and those of Percheron, Truqui and Kaup in our collections.

A second purpose of this paper is to enumerate the species of *Passalidæ* brought by Mr. H. H. Smith from the islands of St. Vincent and Grenada, so completing my list of the Lamellicorn fauna of those islands so far as it is known. This has entailed the description of one new species. Descriptions of a few other new species in the British Museum collection have also been added.

The following list comprises the whole of the species of which the types are in the Oxford Museum placed in their modern genera, the names in brackets being those which become synonyms—

Ceratocupes (*Cihastatus*, Perch.)=*fronticornis*, Westw. This is recorded by Percheron as of unknown locality, but his type bears the label "Hardwickii, Hope. Nepal," and on another label "Bengal," and was no doubt brought from Nepal by Maj. Gen. Hardwicke. The species was described two years earlier by Westwood, from the Melly collection in *Ann. Mag. Nat. Hist.*, 1842, (viii), p. 124. There has been strange confusion about this reference.

Comacupes punctifrons, Hope.

Heliscus (*subcornutus*, Hope)=*H. tropicus*, Perch.

Spasalus hopei, Perch.

Veturius platyrrhinus, Hope. As stated by Hope, the type is from Venezuela. Kuwert has given the Amazons as its habitat, while Bates has put together several Central American forms under this name. Of these all the specimens from Nicaragua and part of those from Costa Rica and Panama belong to *V. sinuatocollis*, Kuw., and two other specimens I have described later on as *V. isthmicus*. The remaining specimens from Costa Rica and Panama agree with the short diagnosis of *V. platyrrhinoides*, Kuw. (Bolivia) which I do not consider sufficiently differentiated

from Hope's example for separate recognition. We have also a series from Ecuador, but I have seen no examples of *V. platyrrhinus* from Brazil.

Epiphoroncus, gen. nov. (*tetragonus*, Hope) = (*quadrifrons*, Perch. = *occipitalis*, Eschs.). I have found in the Hope Collection, in addition to the type of Hope's description, a specimen of this species labelled in Percheron's handwriting "quadrifrons, P. localité?" In Percheron's Monograph *quadrifrons* is said to come from the Cape of Good Hope, and Kuwert has placed it, on account of its reputed habitat in the genus *Didymus*. No Passalidæ are known in S. Africa, although Kuwert includes several others, and this insect seems to be not uncommon in Brazil. It was tentatively referred (as *tetragonus*, Perch.) by Kuwert to his species *Morosophus ruhl'i*, but is quite different and agrees with no existing genus, and I have been obliged to form one (characterised later) to receive it.

Leptaulax vicinus, Perch. This occurs in Penang and Borneo (Sarawak). It is incorrectly put down by Kuwert as synonymous with *L. planus*, Ill., but is more related to *L. angustifrons*. It is rather larger and has no large punctures upon the metasternum, which is finely and thickly punctured in front. All these species belong to the genus *Leptaulacidæ* as recently characterised by Zang.

Eumelosomus africanus, Perch. = (*E. lævipectus*, Auriv.). Burmeister and all subsequent writers have relegated this to *Didymus parastictus*, Imh. It is a much more convex species with a more thickly punctured thorax and by the median tooth of the clypeus is excluded from the gen. *Didymus* in Kuwert's sense. In the British Museum there are specimens from Sierra Leone, Cameroon and even from Uganda (Msozi), so that its range is very wide.

Pentalobus palinii, Perch. Inhabits the Gold Coast (Akropong) and Gaboon.

Basilianus cantori, Perch.

Gonatas naviculator, Perch.

Pharochilus rugiceps, Hope, is probably *P. brevidentatus*, Kuw., and is exceedingly close to *P. politus*, Burm., but the side pieces of the mentum are smooth and sooty. It is placed by Kuwert in another section of the genus.

Pharochilus cancrus, Perch. = *P. dilatatus*, Dalm. This has been wrongly identified with a species of *Tiberius*. The type is a very immature specimen of unknown habitat and the error is therefore not surprising. Percheron

applied the name *dilatatus* to the allied *P. politus*, Burm., as has long been known. As the species to which the name *cancerus* has hitherto been assigned is a well-marked one for which no other name is available it will be well to call it *Tiberius kuwerti*.

Certain of the most remarkable forms of Passalidæ have not yet found their proper places in the system. The genus *Cylindrocaulus* of Fairmaire, a curious Chinese insect, and the Mexican *Spurius bicornis*, Truqui, were together made into a sub-family by Kuwert, a strange proceeding due only to the absence in both of the median cephalic horn common to most sections of the family. *Cylindrocaulus buccrus*, Fairm., is an apterous insect of very peculiar form, but still more peculiar is *Aulacocyclus patalis*, Lewis, an allied Japanese species for which a new genus *Aurikulus* has been made by Zang. It was described and figured in the Trans. Ent. Soc., Lond., 1883, p. 341, Pl. xiv, figs. 6 and 7, but was overlooked by Kuwert. In both species the disc of the thorax is drawn out in front into a bifid protuberance, a feature very strange for this family, although slightly suggested by the form of the thorax in *Ceratocupes*, and it is in the vicinity of that genus that other essential characters of these forms place them, although probably the most aberrant species in the family. In *C. buccrus* the front coxæ are separated by a strongly elevated lamina, which is an infringement of a main feature of the Aulacocyclinæ, but in *A. patalis* the coxæ are more elevated than the intervening lamina, which is so much reduced that they are practically contiguous in the middle. The very short connate elytra (indicating inability to fly) are also quite exceptional, the only flightless Passalidæ hitherto recorded being of American genera. *A. patalis*, Lewis, has the elytra even shorter relatively and more bulbous than *C. buccrus*, Fairm., which I have been kindly enabled to examine by M. Oberthür, who possesses also an undescribed insect from Wa-shan which, although head and thorax are formed like those of *Cylindrocaulus*, is winged and has the hinder part of the normal shape. The head in these beetles is quite smooth and concave, and its lateral walls are produced above the eyes into a pair of horns, which in *C. buccrus* are slender and pointed and in *A. patalis* flattened, widening from base to extremity, where they are truncated by an incurved line. In the latter insect there is also a

rather sharp tubercle below each shoulder formed by the extreme lateral margins of the elytra. The stridulating apparatus is like that of *Proculejus* and other flightless genera, a narrow strip of each wing having been retained for the purpose.

Another Oriental genus *Kaupiolus* (*Vellejus*, Kaup.), is flightless, a fact not hitherto recorded. Although having the form of the elytra always attending this condition it has no special affinity with any of the other genera exhibiting it.

I am able to supply the true habitat of two species of Aulacocyclinæ of which it has remained unknown. The type of *Comacupes felderi*, Stol., is in M. Oberthür's collection, and I have identified it with an insect in our collection found by Wallace at Amboina. *Taniocerus deyrollei*, Kaup, is recorded as coming from St. Denis in Réunion I. M. Oberthür has sent me a specimen showing that this is due to a mis-reading of "Pt. Denis," an abbreviation standing for Port Denison in N. Queensland.

The *Passalus sagittarius* of Smith has been the subject of extreme confusion. In his "Prodromus," Kaup placed this first in his new genus *Oileus*, uniting *P. rimator*, Truqui, with it as conspecific. The types, both of which are in the British Museum, are quite different. Kaup determined a specimen in the collection as *sagittarius*, but evidently overlooked the type, for his description applies to neither that nor his identified specimen which are quite distinct from one another. In a later work he restricted *Oileus* to the so-called *sagittarius*, and another species (*heros*, Truqui), not previously assigned to it, and finally, in his Monograph he rejected *sagittarius* also, completing the transformation of his genus into "something new and strange." "*Sagittarius*" now constitutes, together with a second form *sargi*, Kaup, the genus *Rimor*; but further adventures are in store for it, for Kuwert has contributed his share to the tangle, dividing *Rimor* into two, and placing the perturbed ghost of *sagittarius* in his *Rimoricus*. Both authors refer to *rimator*, Truqui, by this name, and they have been followed by Bates in the "Biologia Centr.-Americana"; and it seems to have been again described by Casey as *Rimor munitus*. Our specimens, recorded by Bates, are chiefly from the same part of Mexico as those to which the later name is given, and although larger than Truqui's, vary considerably in their proportions. In

the latter respect, by which he distinguishes *R. munitus*, Casey's dimensions agree almost exactly with those of Truqui's type.

This species is therefore the proper type of *Oilcus*. Zang has rightly indicated the true species but without knowing that Kaup had wrongly applied the name *sagittarius* to it and has so become involved in the confusion. *Passalus sagittarius*, Smith, of which no second specimen is yet known, really belongs to Kuwert's group *Petrejinæ*, differing from the genus *Petrejus* in being flightless, and having accordingly very short elytra fused together at the suture and curvilinear at the sides. A similar form has been described as *Procululus inca* by Zang and, although the generic characters formulated from that species are not all exhibited by Smith's insect, I think the two may very well be associated together. The type of *Procululus sagittarius* is rather larger than that of *P. inca*, it has the labrum arcuately excised along its whole width, so that the angles are acute, as the clypeal ridges extend beyond the front margin and are distinctly tuberculated both at their extremities and a little before, and the median horn is long, free, acutely pointed and without lateral outgrowths behind.

The synonymy of *Oilcus* is accordingly as follows:—

OILEUS, Kaup, Col. Hefte, 1869, p. 3.

Rimor, Kaup, Monogr., App. p. 119.

—, Bates, Biol. Centr.-Amer. (2) ii, pp. 10 and 383.

—, Kuwert, Nov. Zool, 1897, p. 287.

Rimoricus, Kuwert, l. c.

rimator, Truqui, Rév. de Zool., 1857, p. 266.

sagittarius, Kaup (nec Smith).

—, Bates, l. c.

—, Kuwert, l. c.

nunitus, Casey, Ann. New York Acad., ix, 1897, p. 644.

sargi, Kaup, l. c.

v. *honestus*, Kuwert, l. c.

Kuwert's *Rimor ridiculus* has been separated by Zang as *Coniger ridiculus*, Kuw., and for the second *Oilcus* of Kaup (i. e. *heros*, Truqui) Zang has coined the new generic name *Nasoproculus*.

The differences which served Kuwert for the generic separation of *Oilcus rimator*, Truqui, and *Sargi*, Kaup, are

very insignificant and I do not think the desirability of sinking his name *Rimoricus* will be disputed. Similarly *Rimor honestus*, Kuw., owes its existence only to the occasional absence in Costa Rican examples of *O. sargi*, Kaup, of a slight furrow upon the scutellum and a few other variable features of no greater importance.

Rhodocanthopus maillei, Perch., has been quite naturally removed by Kuwert to the neighbourhood of *Phoroncus* and renamed *Polyacanthopus*, which is certainly a redundant name. Of the specimens attributed by Bates to the same species I can only recognise those from Cordova, Orizaba and Jalapa as really belonging to it. Other Mexican examples belong to *Nelcides punctatostriatus*, Perch. and *curtus*, Bates, the series from Nicaragua appears to be another species, and the specimen from Chiriqui yet another. *R. molestus*,¹ Kuw., is very difficult to distinguish from *R. maillei*, Perch. The genera *Rhodocanthopus* and *Nelcides*, although placed in different groups by Kaup and Kuwert, have been distinguished solely by the degrees of spininess of the middle tibia, which, as it shows a gradual *crescendo* from one extreme to the other, makes the line of demarcation quite arbitrary. Another difference which generally accompanies that of the middle tibia has not been noticed. It consists in the degree of prominence of the eyes, which in the species with strongly spined middle tibiæ are sunk in the head, very small and in general coarsely faceted. In the other series (*Nelcides*) they are large and prominent and typically finely-faceted. This correspondence although not exact, probably indicates some difference of habit. *Rhodocanthopus curtus*, Bates, and *inops*, Truqui, must be placed in *Nelcides*. Both have been wrongly determined by Kuwert. The former is very closely allied to *N. punctatostriatus*, Perch., differing only in its shorter form. Although Bates recognised only a single specimen, identical individuals from Mexico, Guatemala and Panama were placed by him in *R. punctatostriatus* and *R. maillei*.

The genus *Pleurostylus* owes its existence only to the exigencies of the Kaupian system. The type specimen of *Pleurostylus trapezoides* in our collection is a Brazilian species of the very common genus *Veturinus*. By some accident the label of an Indian insect became attached to it, but there is no apparent reason why Kaup assigned it to his "Solenocycleæ" as a probably African species,

except that in his geometrical scheme a blank chanced to occur at that point. *Veturius trapezoides* is larger than, but has otherwise almost the characters of *V. gabonis*, Kuw., which is also attributed to Africa with no greater credibility. It should never have been described and least of all by a name selected to perpetuate an error. *V. trapezoides*, Kaup, was found at Bahia by Lacerda. Its middle tibiæ are rather thickly hairy and are also armed on the outer edge with a fairly strong spine.

A curious example of the Kuwertian method is afforded by his genus *Proculejoides*. This he formed for *Proculejus championi*, Bates, of which the original specimens are in the British Museum. M. Oberthür has sent me a specimen of it from the Kuwert collection, which reveals the fact that this species is that figuring in the Monograph, not as *Proculejoides championi*, but as *Ogyges lævior*, of Kaup, which is an obviously different insect. The few characters tabulated as distinctive of *Proculejoides championi*, Bates, do not apply to it, and were apparently only derived from what he wrongly assumed it to be from Bates' description. As it is very distinct from *Ogyges* it will be best to retain Kuwert's name while correcting his diagnosis. The front of the clypeus forms a broad depressed band, not cut off, as stated, by a transverse groove. The antennal leaflets are much shorter than those of *Ogyges lævissimus*. The elytra are not at all flattened, the intervals very convex and the striæ not punctured except faintly in the lateral ones. The sides of the elytra are quite without hairs but there are a very few minute ones scattered over the anterior face.

Herr Zang has added another species, *P. granulipennis*, Zang, which appears to have the true characters of the genus, but he was mistaken in also including *Proculejus nudicostis*, Bates, which he knew from description alone.

The flightless Passalidæ seem to vary in size to a greater extent than is usual in the family. There is a considerable range of variation in this respect in the giant *Proculus mniszcehi*, and the same is the case in the genus *Publius*, of which the two species have both been described from unique specimens. Of *P. crassus*, Smith, we have, besides the types, two other specimens from Colombia, one of which is 50 mm. long and the other 42 mm.

By the kindness of Herr Schenkling, of the Deuts. Ent. National Museum, I have also been able to examine

the types of *P. spinipes*, Zang, of which we have specimens from Chulumani, Bolivia, and R. Marcapata, Peru. The Peruvian specimen is 47 mm. long. The spines upon the four posterior tibiæ, from which the species is named, are not always easily distinguishable, but it is a very well-marked form, easily recognisable by the feebleness of the elytral striæ, which, contrary to the almost invariable rule among these insects, become fainter instead of stronger towards the sides.

Kuwert has formed a new genus *Verroides* for certain insects inhabiting Brazil and Guiana, of which he has recognized three species, differing from *Verres* only in the labrum being very deeply cleft. I believe one or all of them to be *Verres furcilibris*, Eschs., which Kuwert has left in the older genus. This is evidently due to some blunder, as he gives the habitat as Guatemala, although each of the authors quoted by him without comment has recognised it as a South American species. There are specimens in our collection, all of which I regard as belonging to *Verroides furcilibris*, Eschs., from the Amazons (Monte Alegre and Para), Pernambuco, British Guiana (Georgetown) and Trinidad.

In the succeeding pages I describe, in addition to a new genus which I have already referred to as necessary for *Passalus occipitalis*, Eschs., a few well-marked new forms in our collection, beginning with one from the island of Grenada. In order to complete the enumeration of the Lamellicorn Coleoptera of St. Vincent and Grenada contained in two previous papers in these Transactions I give here a list of all the Passalidæ from the West Indian Islands contained in our collection:—

Verroides furcilibris, Eschs., Trinidad.

Spasalus puncticollis, Serv. (Kuw.), Dominica, St. Lucia, Nevis.

Passalus (*Nelcus*, olim) *interruptus*, L., Trinidad.

P. unicornis, Serv., Dominica, St. Lucia.

P. tlascala, Perch., Trinidad, Grenada, St. Vincent.

Scalmus (*Ninus*, Kuwert), *interstitialis*, Eschs., Trinidad, Grenada, Cuba, Jamaica. I can find no adequate justification for the numerous so-called species into which Kuwert has divided this.

Pertinacides affinis, Perch., S. Domingo, Hayti.

Nelcides antillarum, sp. n., Grenada.

Nelcides antillarum, sp. n.

Modice convexus, sat brevis, cornu pyramidale postice vix producto, carinis anterioribus late et arcuatim divergentibus, brevissimis, tuberculis prominentibus a cornu et clypei dentibus externis fere æquidistantibus terminantibus; prothorace subquadrato, margine antico fere recto, postice leviter arcuato, lateribus medio paulo contractis, angulis anticis fere acutis, disco lateribusque impunctatis, linea lata sinuata postoculare ex punctis magnis consistente; scutello parcellissime punctulato; elytris profunde punctato-striatis, interstitiis convexis, humeris paulo prominentibus, corpore subtus fere nudo, metasterno impunctato vel punctis obsolete nonnullis lateraliter sparsuto.

Long. 18.5-20 mm.

Hab. GRENADA I., Windsor, Chantilly, Grand Etang.

Among described species this is most nearly related to *N. guatemalensis*, Kaup, but is rather larger and considerably more convex. It may easily be distinguished from that and all the other species tabulated by Kuwert by the form of the frontal carinæ. The median cephalic process is short and upright, the posterior lateral appendages are obsolete and the anterior carinæ are very short, enclosing a semicircular area with a slight elevation in the middle and stopping short at the frontal tubercles, which are placed only a little beyond the middle of the interval between the cephalic horn and the outer clypeal teeth. The shoulders are rather prominent and without hairs, and the elytra are deeply sulcate, with rather feeble puncturation in the sulci and highly convex intervals.

Beetles and larvæ were found together by Mr. H. H. Smith in rotten logs in the forest between 500 and 2000 feet altitude.

The following is the third species of a peculiar and apparently rare Central American genus:—

Triænurgus solidus, sp. n.

Crassus, latus, subdepressus, clypeo antice toto marginato, minnte quadridentato, dentibus interioribus distantibus, cornu frontale longo, usque ad clypei marginem porrecto, postice gibboso, profunde sulcato, carinis posticis brevibus, valde elevatis, anticis nullis; prothorace fere quadrato ubique minutissime punctulato; medio profunde sulcato, lateraliter obsolete cicatricoso, punctis nonnullis in cicatrice, linea angusta, marginali vix punctata, antice haux dilatata;

scutello impunctato, medio sulcato; elytris connatis, pone scutellum paulo productis, nitidis, profunde sulcatis, sulcis subtiliter punctatis, humeris paulo acuminatis; prosterno postice producto, rugoso, mesosterno glabro, lateraliter punctato, metasterno polito, postice transversim impresso, lateraliter grossissime punctato, tibiis 4 posterioribus vix spinosis, antennarum flabellis tribus modice elongatis.

Long. 41-43 mm.; lat. 17 mm.

Hab. GUATEMALA, Chuipache, Quezaetenango.

Two specimens found by Mr. Richardson have been presented to the Museum by Mr. F. D. Godman. The species seems to closely resemble *T. junctistriatus*, Kuw., which is intermediate in size between it and *T. subopacus*, Bates. In addition to its considerably larger size, it differs by the deep channel upon the posterior part of the cephalic horn, the absence of punctures upon the scutellum and the different form of the prosternal process. The median part of this is broad, parallel-sided, and strongly produced behind. In front it is deeply grooved at the sides and the median part is coarsely rugose. The mesosternum is quite smooth and shining in the middle and the metasternum, as in *T. junctistriatus*, Kuw., is hairy at the sides, with very large confluent punctures near the hind angles.

Veturius isthmicus, sp. n.

Parvus, modice elongatus, parallelus, cornu frontale parum elevato, carinis posticis transversis, frontalibus angulo acuto incipientibus, deinde angulo obtuso, tuberculo medio incluso duobusque terminalibus a clypei margine multo distantibus; prothorace modice transverso, margine antico fere recto, postico leviter arcuato, lateribus valde ampliatis, late sulcato, sulco obsolete punctato, antice haud dilatato, scutello dense punctulato, linea media angusta lævi, elytris sat profunde striatis, haud punctatis; mesosterno antice toto velutino, metasterno polito impunctato; tibiis 4 posterioribus spina valida post medium armatis, antennarum flabellis brevissimis.

Long. 32.5 mm.

Hab. COSTA RICA, La Virgen, Sarapique; PANAMA, Bugaba.

This is very near *V. tuberculifrons*, Kuw., from the Amazon region, and indeed the short description of that species applies also to this except for its rather smaller size and the fact that the sides as well as the middle of

the mesosternum are silky and opaque. It is one of the smallest species of the genus, being about the size and shape of *V. assimilis* and *cirrhatus*, from which it differs by the strong spine on each side of the four posterior tibiæ and the deep but unpunctured elytral striæ. The ridges of the head are well developed. The posterior carinæ are almost in a straight line and the frontal carinæ form a very acute angle at the base of the median horn and afterwards rather abruptly diverge obtusely and enclose a broad tubercle. The terminal tubercles are prominent and separated by an interval rather more than half the breadth of the clypeus. There is no sharply incised line on the vertex of the head behind the horn.

Veturius punctatostriatus, sp. n.

Sat brevis, nitidus, capite lævissimo, clypeo paulo excurvato, utroque angulo late fossulato, cornu simpliciter; prothorace parum transverso, lateribus sat regulariter curvatis, fossa laterale lata, antice haud dilatata; scutello crebre punctato, linea media lævi; elytris profunde sulcatis, sulcis ubique punctatis, interstitiis valde convexis, prosterno postice dentato, mesosterno antice et lateraliter sericeo, postice nitido, metasterno nitido, impunctato, medio postice transverse impresso; tibiis 4 posterioribus post medium fortiter spinosis.

Long. 38 mm.

Hab. BRITISH GUIANA, Georgetown.

A number of specimens were collected by the Rev. W. Harper in 1877. The species is very distinct from all hitherto described and is easily recognisable by its comparatively short form and the very deep punctured striæ of the elytra. Like the last it must also be grouped with *V. tuberculifrons* in Kuwert's arrangement. The head is very smooth, with a conical median horn, of which the lateral outgrowths ("nebenhöcker") are obsolete. The clypeus is slightly rounded in front and minutely notched in the middle and it is divided into three parts of equal length by the frontal tubercles, the two lateral divisions being rather deeply excavated. The carinæ from the base of the horn to the frontal tubercles form almost a semi-circle. The transverse impression behind the horn is strongly curved and deeply incised. The prothorax is about $1\frac{1}{2}$ times as broad as it is long. The lateral margin is regularly curved and the channel is deep and punctured

at the side but not punctured or dilated in front. The scutellum is thickly and finely punctured on each side of the median line. The elytra are rather short and convex, all the striæ visibly and closely punctured and the interstices rounded. The labrum is slightly emarginate and the mentum has a protuberance at the middle. Each of the four posterior tibiæ has a strong spine beyond the middle.

Veturius peruvianus, sp. n.

Parum elongatus, convexus, capite polito, cornu acuto, antice directo, carinis frontalibus triangulum equilaterale includentibus, carinis posticis fere transversis, paulo sinuatis, sulco postico paulo profundo, absque linea incisa; prothorace convexo, toto impunctato, sulco laterale profundo, margine antico sinuato, angulis omnibus arcuatis, scutello punctulato, medio læve; elytris profunde striatis, striis vix perspicue punctatis, interstitiis convexis, humeris antice pilis perpaucis ornatis; meso- et metasterno glabris, impunctatis, illo antice toto sericeo-opaco; tibiis 4 posterioribus extus absque spinis, dense hirsutis.

Long. 42 mm.

Hab. S.E. PERU, Marcapata R.

This is closely related to *V. platyrrhinus*, Hope, but is smaller and has the elytra relatively shorter and more broadly rounded behind, with more elevated costæ. The clypeal ridges are distinct but rather less divergent than in that species, and the median horn is similar but the transverse impression behind it is shallow and without any incised line. The prothorax is rather less broad and more convex, the front margin sinuated, but less strongly, and less prominent in the middle. The anterior angles are also less prominent.

Verres cavicollis, Bates, was evidently unknown to Kuwert, since the insect described by him under that name is scarcely distinguishable from *V. hugeni*, Kaup. We have a specimen, also from Jalapa, agreeing with Kuwert's diagnosis. The true *V. cavicollis* is a quite unmistakable species with a very long horizontal horn and large, nearly circular, pits at the front angles of the pronotum.

The species described by Kuwert as *Verres deflexicornis*, of which the habitat was uncertain, is also in our collection. It inhabits Costa Rica.

Petrejus archidonæ, sp. n.

Modice convexus, paulo brevis, clypei margine recto, capite postice glabro, cornu angusto, fere recto, haud sulcato, usque ad clypei marginem producto, carinis posterioribus fere parallelis, validis, carinis frontalibus postice transversis, deinde valde arcuatis antice recte productis, spatium triplice latius quam longius, subtiliter granulatum, includentibus, capite postice plane impresso, linea incisa valde arcuata, hujus intra utrumque extremitatem fossa profunda tuberculoque sat parvis; prothorace transverso, sulco medio integro punctisque perpaucais posticis lateralibus; scutello impunctato; elytris profunde punctato-striatis, convexis, humeris antice pilis nonnullis brevissimis ornatis; metasterni angulis posticis vix punctatis.

Long. 25 mm.

Hab. N. ECUADOR, Archidona.

This appears from Percheron's sufficiently careful description to be very near *P. nasutus*, Perch., but with a rather different head. In *P. archidonæ* the clypeus is finely granulated, and has no trace of the large impressions characteristic of the other species. The cephalic horn reaches as far forward as the front of the clypeus and is compressed and not channelled. The posterior accessory ridges are nearly parallel to it, carinated and separated from the base of the horn by deep grooves. There is a wide flat depression behind these which is bounded by a strongly curved and deeply incised line, at each end of which there is a small tubercle with an impression just behind it. The prothorax is gently curved outwards in front and behind and has its sides nearly straight to beyond the middle. The marginal channel is punctured and not dilated in front and there are a few large punctures in front of the lateral impressions. The scutellum is smooth and the elytra strongly punctate-striate. There are two or three punctures on each side of the metasternum behind.

Petrejus henrici, Rosmini, appears to be very similar to this species, but is smaller, and has the clypeus smooth except for small isolated punctures.

Petrejus peruvianus, sp. n.

Convexus, sat elongatus, capite rugoso, clypei margine recto, angulis productis, cornu antice producto, acuto, sed sat brevi, postice

lato, globoso, carinis posterioribus fere parallelis, carinis frontalibus valde arcuatis, ante marginem evanescentibus, spatium grosse punctato-rugosum, duplo latius quam longius includentibus, capite postice plane depresso, linea arcuata incisa; prothorace lato, lateraliter crebre et fortiter punctato, sulco marginale profunde punctato, antice arcuato, paulo dilatato; scutello postice impunctato; elytris modice convexis, profunde punctato-striatis, humeris antice pilis nonnullis brevissimis ornatis; metasterni lateribus postice parcissime punctatis.

Long. 23 mm.

Hab. PERU.

This species is very similar to *P. recticlypeatus*, Kuw., but the cephalic horn, although horizontally produced, reaches scarcely half way to the clypeal margin, whereas in Kuwert's species it attains to the front. The frontal carinæ terminate in slight tubercles before the margin of the clypeus, enclosing a wide, deeply pitted and rugose area. There are no wrinkles in front of the posterior carinæ, which are longitudinal. The punctures at the sides of the prothorax are coarse and numerous and the marginal grooves are punctured throughout and in front are very large, deep and strongly curved. The general form is more elongate than in the preceding species. The elytra are similarly sculptured, but the striæ are rather finer and the interstices less convex.

Petræjus spinosus, sp. n.

Parallelus, parum depressus, capite fortiter spinoso, impunctato, clypeo lævi, quadridentato, dentibus interioribus indistinctis, cornu frontali longo, acuto, lateraliter paulo sinuato, supra fere carinato, postice haud globoso, carinis frontalibus obsoletis, tuberculis nullis, carinis posterioribus longitudinalibus, carina oculari utroque tri-spinosa, spina antica longissima, acuta, horizontali, secunda valida, obliqua, tertia minuta; prothorace parum transverso, medio anguste sulcato, lateribus medio irregulariter sat crebre punctatis, angulis anticis paulo productis, acutis; scutello antice subtiliter punctato; elytris anguste striatis, striis dorsalibus hand perspicue, lateralibus leviter, punctatis, humeris fere recte angulatis, nudis; metasterni medio polito, nitido, lateribus crebre punctatis, nudis, metasterni lateribus parce punctatis.

Long. 18-30 mm.

Hab. ECUADOR, Cachabé.

Four specimens were collected by Mr. W. H. Rosenberg in November 1896, and, like the preceding species, formed part of the collection of the late Mr. Alexander Fry. It is a form very easily recognised by the strong spinous processes with which the ocular ridges are armed. It is smooth and almost entirely devoid of hair. The prothorax is long and its front angles sharply pointed. The elytra are less strongly sculptured than in any other species known to me, the punctures in the striæ being not coarse at the sides and barely traceable dorsally.

Tetraracus centralis, sp. n.

Elongatus, parum convexus, antennarum clava articulis tribus ultimis longibus duobusque præcedentibus multo brevioribus composita, clypeo antice 4-dentato, dentibus interioribus minutis, approximatis, exterioribus validis, cornu frontale minuto, carinato, carinis frontalibus integris, arcuatis, spatium magnum rugosum includentibus, angulo obtuso, tuberculato; prothorace vix transverso, antice angustato, angulis anticis fere rectis, lateribus grosse irregulariter punctatis, sulco marginale angusto, antice valde sinuato, dilatato, grosse punctato; scutello postice impunctato; elytris profunde striatis, interstitiis convexis, striis fortiter punctatis, humeris parce flavo-hirsutis; mesosterno glabro, utrinque profunde fossulato, metasterno medio parce minute punctato, lateraliter grosse haud numerose punctato.

Long. 19 mm.

Hab. COSTA RICA, Volcan de Barba (1600 metres).

Tetraracus is very closely related to *Paxillus*, from which it is unnaturally separated by Kuwert on account of the existence of two minute projections at the middle of the clypeal margin. The form of the club of the antenna in the present insect is shared by only two other described species of Passalidæ, although others exist. The three terminal lamellæ are long, and the two preceding them about half their length, so that even when the club is contracted a distinct break occurs. *T. centralis* is smaller and more elongate than the other two species. The prothorax is rather narrow, distinctly tapering towards the front, with rather sharp front angles. The elytra are moderately flattened, with closely punctured striæ and there are a few short hairs at the shoulders.

Two specimens have been sent to the museum by Mr. P. Biolley.

Eumelus nasutus, sp. n.

Elongatus, valde depressus, capite toto impunctato, clypeo producto, tridentato, dente mediano sat lato, apice subtiliter emarginato, lateralibus acutis validis, cornu frontale minuto, acuto, multo projecto, haud producto, carinis frontalibus fere toto rectis, transversis, ante dentes laterales tuberculis terminantibus, area clypeali omnino læve, cornu postice subtiliter producto, tuberculis lateralibus rotundatis, sat validis; prothorace fere quadrato, angulis anticis leviter productis, acutis, lateribus fortiter disperse punctatis, angulis posticis subtus longe et dense hirsutis; scutello postice impunctato; elytris haud grosse, dorso subtiliter, punctato-striatis, humeris fere recte angulatis, nudis; meso- et metasterno omnino glabris, impunctatis, illo utrinque profunde fossulato; tibiis 4 posterioribus parce setosis, vix spinosis.

Long. 23 mm.

Hab. ECUADOR, Cachabé.

One specimen was found at Cachabé by Mr. W. H. Rosenberg, and I have also received the species from M. Oberthür, whose specimens were collected by Semiradski. It is a peculiar form for which a new genus would no doubt have been made by Kuwert, but in the present state of the classification I prefer to avoid the further multiplication of genera as much as possible. I cannot however compare this species with any other known to me.

The median part of the head is rather produced forwards, so that the anterior declivity of the frontal horn, which is smaller and vertical in front, is nearly on a level with the outer angles of the head, as well as the frontal carinæ, which form almost a straight line. In front of the latter the clypeus forms a smooth transverse parallelogram terminating in three strong teeth of equal length, the outer ones triangular and acute and the middle one parallel-sided and slightly impressed at its extremity. The prothorax is rather long, with sharply pointed front angles, the elytra are strongly depressed, with finely punctured stria, and the body is very smooth beneath.

I have already mentioned that *Passalus occipitalis*, Eschs., has remained unknown to successive monographers of the group, and can be referred to no existing genus. I propose for this the name of *Epiphoroneus*, as it will enter the Phoroneinæ of Kuwert.

The clypeus is produced in the middle where it bears two closely approximate teeth. The frontal carinæ are directed towards the two outer teeth which they do not quite reach. They are parallel in front, sinuated behind and meet in an acute angle far back upon the head, pushing the median horn back, so that it forms a backwardly-directed blunt tubercle. The elongate area enclosed by these carinæ is densely covered with large annulated pits.

Epiphoroncus occipitalis, Eschs., is excellently described by its author, but the species to which the name was applied by Percheron is an obviously different insect. It is placed in *Phoroncosomus* by Kuwert, who refers only to the later description. In the Munich Catalogue Eschscholtz's species is strangely identified with the West Indian *Passalus (Nelus) unicornis*, Serv.

The references are as follows :—

(*Epiphoroncus*) *occipitalis*, Eschs., Nouv. Mém. Soc. Ent., Mosc., 1829, p. 21.

tetragonus, Hope, Cat. Lucanoid Coleoptera, 1845, p. 28.

quadrifrons, Perch., Monogr., 1835, p. 64.

The African Passalidæ, which are not very numerous, and form a fairly homogeneous assemblage, were arranged by Kuwert in two principal groups, which he placed far apart. The majority of them form the Mitrorrhinæ, named from the American *Mitrorrhinus*, which he curiously associated with them. The other group, the Erionominæ, he boldly placed in the very midst of the main body of American genera. All really belong to the *Lep-taulax* group of Old World Passalidæ, *Erionomus* forming a section distinguished by its convexity and the hairy sides of its elytra. Two species of this latter genus were separated by Kuwert under the name of *Eriopterus*, on account of the existence of two minute projections at the middle of the clypeus, which are inconstant and of little importance. A more important feature by means of which the species may be separated is found in the elytral epipleuræ. In the two species forming Kuwert's *Eriopterus* (*E. pilosus*, Auriv., and *alterego*, Kuw.), the marginal costa of the elytron if traced from the apex will be found to shut off anteriorly a broad external strip. In *Erionomus latericrinitus*, Kuw., this strip is very narrow, and in *E. planiceps*, Eschs., the costa is not continued to the shoulder

and the epipleural strip is consequently undefined. In the following new species a similar condition exists. This species, according to Kuwert's definition, would belong to *Eriopterus*, and, therefore, that genus must be abandoned. Zang has already pointed out that *Eriosternus* of Kuwert has no generic value.

Erionomus platypleura, sp. n.

Sat convexus, parum nitidus, capite ubique subtiliter punctato, clypeo fortiter 4-dentato, medio plerumque minute bidentato, carinis frontalibus antice parallelis, postice angulo recto convergentibus, spatium longitudinaliter plicatum includentibus, cornu mediano breve, postice lato, tuberculis lateralibus fossis sat profundis distincte diviso; prothorace lato, ubique minute punctulato, punctis majoribus nullis, fossa laterale minuta, sulco laterale paulo rugoso, antice haud dilatato, paululo deflecto; scutello lævi; elytris tenuiter et æqualiter striatis, striis ubique impunctatis, interstitiis lateralibus ab humeris fere ad medium crebre punctatis et pilosis, costa marginale postica haud ad humerum producta; prosterno postice convexo, crebre punctato, piloso, mesosterni medio anguste lævi, convexo, lateribus crebre punctatis, pilosis; antenuarum flabellis tribus ultimis brevissimis.

Long. 35 mm.

Hab. BRITISH E. AFRICA, Kavirondo.

E. platypleura is similar to *E. pilosus*, Auriv., in size and the configuration of the head, but markedly differs in the peculiarity already referred to in the lateral portion of the elytra, in which it most nearly resembles *E. planiceps*, Eschs. The lateral punctured area extends nearly half the length of the elytra and is rather flat, the striæ becoming faint. The costa forming the outer edge of the elytron behind is not continued forward to the shoulder, so that no definite epipleura is traceable. The striæ are everywhere destitute of the punctures faintly traceable in all the other species. The three lamellæ of the antennal club are extremely short, as in *E. latericrinitus*, Kuw. The frontal carinæ of the head at their posterior part, which is marked off by distinct tubercles, are slightly curved outwards, instead of inwards as in *E. pilosus*, and meet in a right angle. The posterior appendages of the median horn are separated from it by distinct grooves and form rounded bosses. The whole surface in our series of specimens is less glossy than that of the other species.

Didymus carnifex, Kuw. I have identified this species, of which the habitat is quoted by Kuwert as "Gaboon?" in a form collected at Kavirondo, British E. Africa. I have seen a series of specimens which are interesting as uniting Kuwert's genera *Didymus* and *Eumelosomus*. In some specimens there are two quite distinct teeth at the middle of the clypeal margin, while in one they are very closely approximated and in others actually form a single median tooth, which may or may not be minutely bifid at the end. I have not noticed similar variation in other species, but it is evident that Kuwert has attached undue importance to this feature and that, failing other means of differentiation, *Eumelosomus* cannot be retained as a distinct genus. The present species seems to be most closely related to *D. (Eumelosomus) kluji*, Kaup.

Didymus curvilineatus, sp. n.

Modice elongatus, depressus, capite vix distincte punctato, clypeo valde 4-dentato, medio vix emarginato, carinis frontalibus antice parallelis, postice acute convergentibus, cornu obtuso, postice sulcato, tuberculis lateralibus globosis; prothoracis lateribus fortiter arcuatis haud crebre, postice parce, punctatis, angulis anticis paulo productis, acutis; scutello impunctato; elytris profunde striatis, striis dorsalibus minute, lateralibus scalariforme, punctatis; mesosterno utrinque longe et profunde fossulato, metasterni postice medio et lateribus punctatis: abdominis segmentis omnibus lateraliter subtilissime rugosis.

Long. 26-27 mm.

Hab. BRIT. E. AFRICA, Kavirondo, Msozi (Uganda).

This is a rather broad and flat species, with the elytra conspicuously widening behind, so that the discoidal striæ are strongly curved. The lateral interstices and their connecting rods are narrow, but less so than in the following species. The head is rather smooth and shining, without any coarse punctures. The frontal carinæ are angulated behind the middle, where there is a tubercle, being nearly parallel in front of this and converging behind to an acute angle. There is a patch of punctures at the middle of the posterior part of the metasternum and a patch of larger punctures on each side. The abdomen is finely punctured at the sides and at the extreme apex of the terminal segment.

D. curvilineatus appears to be allied to *D. haroldi*, Kuw., but is smaller, the labrum is distinctly emarginate in front and the sides of the prothorax are punctured from the front to the hind angles.

Didymus congoensis, sp. n.

Modice elongatus, depressus, capite ubique parum profunde varioloso-punctato, clypeo valde 4-dentato, medio minute bi-tuberculato, carinis frontalibus antice leviter, deinde acute, convergentibus, cornu frontale obtuso, postice globoso, sulcato, cum tuberculis lateralibus minute punctulatis; prothoracis lateribus antice et postice grosse punctatis, ubique arcuatis, angulis anticis acutis; scutello impunctato; elytris profunde striatis, striis dorsalibus vix perspicue punctatis, lateralibus latis, crebre scalariforme punctatis, interstitiis lateralibus angustis; metasterni postice medio et lateribus sat crebre et grosse punctatis, abdominis lateribus segmentoque ultimo toto subtilissime punctato-rugosis.

Long. 26-28 mm.

Hab. CONGO, Mayanda; ANGOLA, San Salvador.

This nearly resembles the preceding species, of which it has the size and form; but the elytra are more strongly sculptured laterally, with narrower longitudinal and transverse ridges. The head is punctured all over, the punctures being fine upon the elevated parts and large and round in the depressions. The punctures upon the posterior part of the metasternum, but at the middle and in the angles, are closer and more numerous. The last abdominal segment is finely punctured all over, but less closely at the middle.

In most respects the species agrees with *D. latro*, Kuw., but the lateral sculpture of the elytra is stronger and the transverse fold upon the last abdominal segment of that insect is absent.

Didymus lævisternus, sp. n.

Modice depressus, capite punctato-rugoso, postice nitido, clypeo fortiter 4-dentato, medio minute emarginato, carinis frontalibus arcuatis, post medium tuberculatis, haud angulatis, angulo apicale fere recto, cornu obtuso, lato, vix sulcato; prothoracis lateribus ubique haud crebre punctatis, arcuatis, angulis anticis fere rectis; scutello impunctato; elytris profunde striatis, striis dorsalibus

minutissime, lateralibus grossissime scalariforme, punctatis; abdominis segmento ultimo medio et lateribus subtiliter rugoso ibique dense fulvo-villoso.

Long. 28-30 mm.

Hab. BRITISH E. AFRICA, Kikuyu, Aberdare Mountains (Kenya Prov.).

A number of specimens were collected by Dr. S. L. Hinde in the Aberdare Mountains. In general appearance the species is closely similar to the last, although rather larger. It is easily recognised by the absence of punctures from the disc of the metasternum, a feature found previously only in *D. laevis*, Klug. There is generally, though not invariably, a single large impression near the posterior margin of the metasternum, the sides of which are also smooth except for a very few punctures in the hind angles. The last abdominal segment is finely rugose except at the front margin and the middle part bears a thick pad of golden hairs. The other segments have a small triangular rugose area on each side. The head is strongly rugose in front, the rugosity being produced by large shallow punctures which tend to coalesce and become obliterated. The median process is broad behind and scarcely sulcate. The lateral margins of the thorax are rather uniformly but not thickly punctured and those of the elytra have a strong scalariform sculpture.

Didymus ruwenzoricus, sp. n.

Parum depressus, supra ubique minute punctulatus, capite varioso-rugoso, clypeo fortiter quadridentato, medio minute bidentato, cornu mediano parum prominente, tuberculis posticis distinctis, conicis, carinis frontalibus integris, regulariter arcuatis, angulo acuto convergentibus, prothoracis lateribus leviter arcuatis, sat crebre punctatis, angulis anticis fere rectis; scutello impunctato; elytris punctato-striatis, punctis dorsalibus subtilibus, lateralibus densis, scalariformibus; mesosterno glabro, utrinque late foveolato; metasterni medio impunctato, angulis posticis punctis parvis nonnullis; abdominis segmentis utrinque triangulariter rugose impressis, segmenti ultimi dimidio postico crebre punctato et aureo-hirto.

Long. 21-22 mm.

Hab. UGANDA, Mount Ruwenzori.

A series of specimens were collected by the Hon. Gerald Legge.

This species is also distinguished by the metasternal plate being quite free from punctures. It is much smaller than the previous insect, but greatly resembles the West African *D. parastictus*, Imh. In addition to the unpunctured metasternal disc, it differs from that species in the rather less acute front angles of the prothorax, the sharply-limited rugose puncturing of the sides of the abdomen, which is confined to definite depressions, the very slight emargination of the last segment and the pilosity of its latter half.

Didymus crassus, sp. n.

Robustus, sat brevis, modice convexus, capite subtiliter punctato-rugoso, clypeo quadridentato, medio late emarginato, dentibus æqualibus, carinis frontalibus vix arcuatis, post medium angulatis et tuberculatis, cornu mediano obtuso, postice haud lato aut sulcato, tuberculis posticis transverse carinatis; prothorace læve, medio canaliculato, fossis lateralibus minute punctatis, sulco laterale angusto, paulo punctato, prothorace præterea impunctato; scutello antice subtiliter punctulato, postice impresso; elytris striatis, striis lateralibus leviter punctatis, duabus juxta-suturalibus fortiter impressis, tribus intermediis tenuibus; mesosterno lato, glabro, utrinque fortiter foveolato, lateribus punctatis et hirsutis, metasterni medio et angulis posticis impunctatis, lateribus punctatis et hirsutis; abdominis segmento ultimo postice depresso et crebre punctato, penultimo omnino polito.

Long. 34 mm.

Hab. UGANDA, Mount Ruwenzori.

A single example of this isolated form was found by Mr. Legge. Although agreeing in essential features with *Didymus* it has more the aspect of *Erionomus*. It is large, broad, and little flattened, the head is normal, the prothorax devoid of punctures except for a few minute ones in the lateral scars, and the elytral striæ are only slightly punctured, the three exterior dorsal ones being much feebler than the rest. The sides of the elytra are naked, but there are a few hairs at the anterior face. The sides of the meso- and metasternum are hairy, and the latter is without punctures either at the middle or the hind angles.

Eumclosomus affinis, sp. n.

E. sansibarico, Har., proxime affinis, sed metasterni angulis posticis parce punctatis abdomineque fere omnino polito: sat convexus,

clypeo 5-dentato, carina media nulla, carinis frontalibus valde arcuatis, angulo obtuso convergentibus, cornu mediano antice conico, postice vix sulcato, a tuberculis lateralibus vix diviso; prothoracis lateribus grosse sat crebre punctatis, angulis anticis rectis; scutello polito; elytris punctato-striatis, punctis dorsalibus subtilibus, lateralibus grossis, scalariformibus; metasterni medio impunctato, angulis posticis sat sparse punctatis; abdominis lateribus vix punctatis, segmento ultimo polito, postice transverse bifoveolato.

Long. 26-28 mm.

Hab. UGANDA, Mt. Ruwenzori.

Several specimens were collected by Mr. Legge.

This is of the same size and shape as *E. sansibaricus*, Har., from which it is only distinguishable by a close examination. It differs by the shield-like space between the frontal carinæ being rather less pointed behind and showing no trace of a median carina, by the thinly, instead of closely and coarsely, punctured hind angles of the metasternum, and the almost unpunctured sides of the abdomen.

Leptaulacides pulchellus, sp. n.

Parvus, subconvexus, niger, metasterno, abdomine elytrorumque dimidio anteriore rufis; capite parce punctato et piloso, clypeo quadridentato, dentibus exterioribus brevioribus, carina mediana obsoleta, antice per paulo producta, cornu frontali acuto elevato, carinis anticis late divergentibus, vix arcuatis, ad marginem haud attingentibus, carinis posticis ad illas parallelis, angustis, productis; prothoracis lateribus ubique sat disperse punctatis; scutello postice impunctato; elytris parum depressis, punctato-striatis, punctis lateralibus fere scalariformibus; metasterni lateribus punctis confluentibus bene demarcatis, medio uni-impresso; abdomine toto polito.

Long. 14 mm.

Hab. NEW GUINEA, Ekeikei.

Of the 600 species of Passalidæ hitherto described, all are unicolorous black (or castaneous when not fully coloured), with one exception which, having been described from a single specimen has been regarded as a possible abnormality. This is *Leptaulacides* (*Leptaulax* olim.) *glaber*, Kirsch., of which the anterior half of the elytra is red and the rest of the upper surface black. I have seen several specimens of this, all collected by Wallace in Batchian, and all exactly alike, and the insect described above is a second species ornamented in the

same way, so that the existence of forms less sombre-hued than the generality need no longer be doubted.

The genus *Leptaulax* has been restricted by Zang to the large species in which there is a well-defined cephalic horn and lateral appendages behind completely separated from the supra-orbital elevations. They may generally be distinguished also by the four clypeal teeth being in a straight line at their tips and by the absence of hair from the depressed parts of the head. *Leptaulacides* comprises nearly all the remaining Oriental species of the family having only three leaflets in the antennal club and contains all the smallest representatives of the family.

Although similarly coloured to *L. glaber*, Kirsch., *Leptaulacides pulchellus* is very distinct. It is smaller and less flattened, with much shorter leaflets to the antennæ and the inner teeth of the clypeus more advanced. The shoulders of the elytra are less pointed, and the hinder border of the red band is a little indented at the suture, whereas in *L. glaber* it is slightly produced at that point.

Chilomazus borealis, sp. n.

Robustus, convexus, capite rugoso, antice late et arcuatim excavato, angulis acute productis, sinistro perpaulo longiore, cornu mediano parum elevatis, lato, carinis posterioribus confuso, carinis anterioribus angulum acutum includentibus, brevissimis, ante tuberculos evanescentibus, his fortibus, approximatis, inter se et cum dentibus clypealibus connexis, prothorace sat longo, parum transverso, impunctato, stria mediana vix perspicua foveaque laterale rugosula; scutello postice lævi; clytris fortiter striatis, striis dorsalibus haud, laterali-bus vix punctatis, elytris postice paulo ampliatis, apice leviter acuminatis, humeris nudis; mesosterno polito, foveis nitidis, metasterni medio bi-impreso, lateribus rugoso-punctatis, hirsutis; antennarum lamellis tribus ultimis longibus, duabus præcedentibus brevibus.

Long. 37 mm.

Hab. ASSAM, Naga Hills (Doherty).

I have seen only a single specimen of this aberrant species, which has many of the characteristics of *Tiberius*, but is excluded from that genus by the existence of a large well-defined tubercle on the anterior part of the mentum. The head is only very slightly assymetrical. The median horn and the two anterior tubercles are placed very close together and enclose an equilateral triangle. The club of

the antenna is composed of three long and two short lamellæ. The prothorax is rather long, without lateral puncturation, and the median groove is obsolete. The elytra are very broad behind, the shoulders rather prominent and not hairy, and the apical angles rather acute. The striæ are very feebly punctured at the sides.

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